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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/532,332

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Michael Arndt

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KENYON & KENYON LLP  
ONE BROADWAY  
NEW YORK, NY 10004

EXAMINER

JOHNSTON, PHILLIP A

ART UNIT

PAPER NUMBER

2881

MAIL DATE

DELIVERY MODE

11/28/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/532,332

Applicant(s)

ARNDT, MICHAEL

Examiner

Phillip A. Johnston

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 7-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

***Detailed Action***

1. This Office Action is submitted in response to Amendment filed 9-10-2007, wherein claims 1-6 were previously canceled, and claims 7 and 10 are amended. Claims 7-12 are pending.

***Examiners Response to Arguments***

2. Applicants arguments are moot in view of new grounds for rejection necessitated by the applicant's amendment.

***Claims Rejection - 35 U.S. C. 102***

3. The following is a quotation of the appropriate paragraphs of 35 USC 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 7,8,10, and 12 are rejected under 35 U.S.C. 102 (b) as being anticipated by Bayly, U.S. Patent No. 3, 211,961.

5. Regarding claims 7 and 10, Bayly teaches an infrared source for a gas sensor comprising: a first layer having first transmission characteristics; and a second layer having second transmission characteristics, wherein a combination of the first and the second transmission characteristics effects a band-pass filter characteristics for an operating frequency range, and wherein the first and second transmission characteristics are based on absorption of

infrared radiation. See Col. 3, line 1-28; Col. 8, line 4-19; and Col. 9, line 4-9, where Bayly teaches an analyzer using an infra-red radiation source having a beam of infrared radiation that passes through a sample cell and then through a series of filters and into a detector. By way of example, when measuring a quantity of light water in a sample of heavy water the strong absorption regions for light water and heavy water are located at different wavelengths of the infrared spectrum (Note Figure 1 below), so that filters are presented in sequence to measure the absorption around the strong absorption region of light water at 2.5, 3 and 3.5 microns ( first and second transmission characteristics), thereby transmission intensity at both longer and shorter wavelengths as well as that at which the light water absorbs is detected in order to measure the resonance absorption amount in comparison to a base or background. See also Col. 3, line 61-75.

6. Regarding claim 8, Bayly teaches the use of multi-layered band pass filters, having selectable transmission characteristics. Col. 4, line 9-47.

7. Regarding claim 12, Bayly further teaches that, the filters are Fabry-Perot interference filters having two semi-transparent reflecting layers separated by a transparent medium whose thickness is equal to half the wavelength of light to be transmitted, resulting in a selectable wavelength transmission band-pass. Col. 4, line 1-50; and Col. 9, line 4-8.

***Claims Rejection – 35 U.S.C. 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 3,211,961 to Bayly, in view of Bushman, USPN 5,726,798.

10. Regarding claim 9, Bayly teaches the use of multi-layered filters, as described above, but fails to disclose the use of filters having one layer of glass and a second layer comprised of either, silicon or germanium.

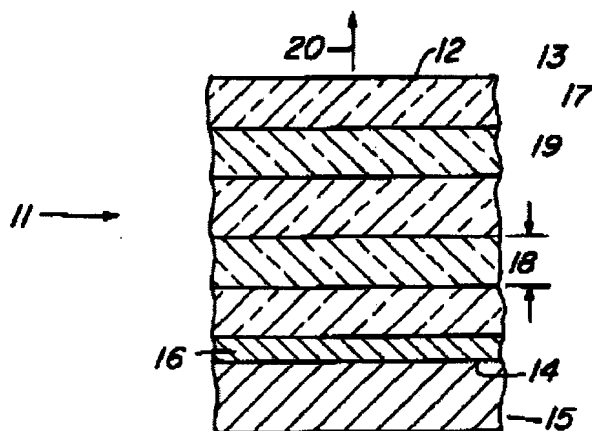
11. Bushman teaches an infrared light source that includes multilayered filters having a glass substrate and alternating layers of Germanium and Silicon Oxide. Col. 6, line 4-29.

12. Bushman modifies Bayly to provide a glass substrate on which alternating layers of Germanium and Silicon Oxide are deposited to provide an infrared transmission wavelength band between 2 and 8 microns.

13. Therefore it would have been obvious to one of ordinary skill at the time the invention was made that Bayly would use the filter of Bushman to provide light at a selected wavelength through a filter having a plurality of parallel layers while reducing emission at other wavelengths of light.

14. Regarding claim 11, Bayly fails to disclose the use of an operating frequency range of the infrared source that includes exactly one pass frequency of the interference filter.

15. Bushman teaches an infrared light source (Note Figure 1 below) that includes energy source 15 that emits radiation through a multi-layered filter having an optical thickness selected to be one-quarter of the wavelength for the light 20 to be emitted. As the light passes through a boundary between alternating layers of different indexes of refraction it is partly refracted, and partly reflected, such that the transmitted light will be at one wavelength while the rest of the wavelengths will not transmit nor emit through the filter. Col. 3, line 37-67; and Col. 4, line 1-14.



*Fig. 1*

16. Bushman modifies Bayly to provide a source that emits a laser-like monochromatic light at a selected wavelength in the infrared region determined by the optical thickness of the layers of the emitter member, while light at other wavelengths are not transmitted.

17. Therefore it would have been obvious to one of ordinary skill at the time the invention was made that Bayly would use the emitter of Bushman to provide a source that emits a laser like monochromatic narrow beam of light at a selected wavelength.

### ***Conclusion***

18. The Amendment filed on 9-10-2007 has been considered but the arguments are moot in view of new grounds for rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

19. Any inquiry concerning this communication or earlier communications should be

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directed to Phillip Johnston whose telephone number is (571) 272-2475. The examiner can normally be reached on Monday-Friday from 7:30 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiners supervisor Robert Kim can be reached at (571) 272-2293. The fax phone number for the organization where the application or proceeding is assigned is 571 273 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PJ

November 16, 2007

  
Jack I. Berman  
Primary Examiner